Navy Environmental Quality Fact Sheet

# Do you perform patch tests?

## Would you like to improve this process in the following areas?

- ***Meeting environmental compliance regulations*** -- Eliminate the need to dispose of patch test solvent contaminated hydraulic fluid.
- ***Improving workers' safety and health*** -- Reduce worker exposure to solvents.
- ***Increasing productivity*** -- Reduce labor due to decreased time to perform patch tests. Reduce solvent procurement requirements.
- ***Saving money*** -- Reduce operational costs due to the reduced time for patch test completion. Eliminate patch test hazardous materials use and hazardous waste management.

*Hydraulic fluid particle counter*

*When repair or maintenance is completed on aircraft hydraulic systems, a patch test is required to test the purity of the hydraulic fluid. Traditionally, maintenance personnel have used the colormetric patch test method. An alternative to the colormetric patch test is the electric particle counter. Particle counters are faster, more accurate, and eliminate the use of solvents. The particle counter has long been an approved method of determining hydraulic fluid contamination. Several portable units are available for use at field activities. Use of the particle counter is approved by the NAVAIR 01-1A-17 Hydraulic Manual. Hydraulic fluid contamination particle counters are being used successfully at many Navy installations.* ***This equipment is available through the Navy Pollution Prevention Equipment Program.***

## How can you achieve these improvements?

Use an Electronic Hydraulic Fluid Contamination Particle Counter.

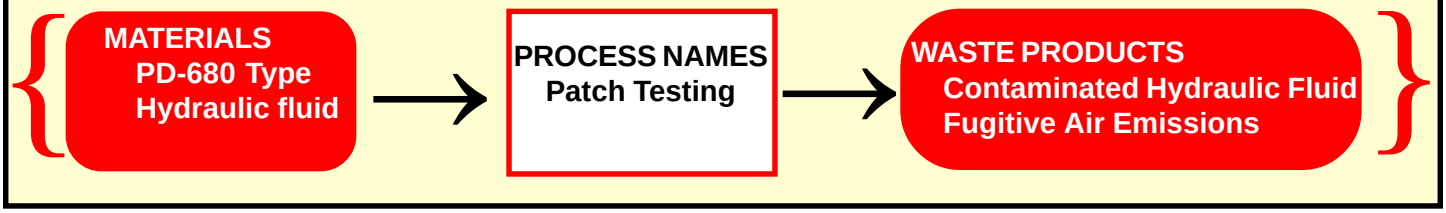
## How does this equipment work?

Hydraulic fluids are tested for particulate contamination using a laser and photo detector system. The particle counter is highly accurate and its effectiveness has been thoroughly demonstrated.

## How will this equipment save you money?

Typically this equipment will pay for itself in less than two years. The cost to implement is $7,500 to $20,000.

## Typical Process Flow Diagram




### How can this technology eliminate or reduce pollution?

This technology reduces the amount of waste generated as a result of patch tests. Implementation will result in the following pollution reductions:

- Dramatic Reduction in the Use of PD-680 Type II.
- Elimination of the Disposal of Contaminated Hydraulic Fluid
- Reduction in Air Emissions Related to Solvent Use.

### Which shops can benefit most from this technology?

This technology can be used in any process that requires testing of equipment hydraulic systems for foreign particles. Particle counters are suitable for use in operational, intermediate and depot level maintenance. Typical shops include:

- Oil Analysis Labs
- Aircraft Overhaul
- Aviation Hydraulics Maintenance/Repair Shps

### Take action: How can you implement this technology?

- **Activity Shop & Work Center Personnel**. If you work at an activity, contact your Pollution Prevention Program Manager. The P2 Program Manager can provide more information and conduct a more detailed analysis, and may be able to provide this equipment at no cost to a Shop or Work Center.
- **Activity Pollution Prevention Manager**. Request funding for this technology through the Navy P2 Equipment Program. Depending on the application, the Environmental Requirements Cookbook may contain project submission information for annual budget submissions to your major claimant.
- **For Additional Technical Information**. More information about this technology can be found in the Joint Service P2 Opportunity Handbook Datasheet No. 6-18 (Web: http://www.nfesc.navy.mil/) and PPEP Equipment Book (Web: http://www.lakehurst.navy.mil/p2/index.htm).

**Achieving Environmental Compliance Through Pollution Prevention**

Everyday the Navy faces the challenge of operating and maintaining the fleet while complying with environmental regulations. This burden can be reduced by implementing pollution prevention technologies and methods to reduce compliance requirements. This Fact Sheet is one in a series designed to encourage activities to implement pollution prevention technologies and methods. The overall goal of this series is to promote sustained environmental compliance at the lowest life-cycle cost.

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